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ACCESS DB #

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175809

Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: BEN SACKY Examiner #: 73489 Date: 12/29/05
Art Unit: 1626 Phone Number: 2- 0704 Serial Number: 10713, 535
Location (Bldg/Room#): 6m5631 (Mailbox #): _____ Results Format Preferred (circle): PAPER DISK

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: Use of Modifiers in a dinitile hydrogenation process
Inventors (please provide full names): Alan Martin Allgeier

Earliest Priority Date: 11/12/03

Search Topic:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate sequence number.

A process for hydrogenating a dinitile comprising
contacting a dinitile with hydrogen in the presence of
a catalyst and a modifier, catalyst comprises element
selected from Fe, Ru, Co and Ni and modifier is
selected from tertiary ammonium hydroxides
(b) ✓ ✓ cyanides
(c) ✓ ✓ fluorides
(d) ✓ ✓ thiocyanides etc

Thanks

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6m5631

STAFF USE ONLY

| STAFF USE ONLY | Type of Search | Vendors and cost where applicable |
|-------------------------------------|-----------------------|--|
| Searcher: _____ | _____ NA Sequence (#) | _____ STN _____ Dialog |
| Searcher Phone #: _____ | _____ AA Sequence (#) | _____ Questel/Orbit _____ Lexis/Nexis |
| Searcher Location: _____ | _____ Structure (#) | _____ Westlaw _____ WWW/Internet |
| Date Searcher Picked Up: _____ | _____ Bibliographic | _____ In-house sequence systems |
| Date Completed: _____ | _____ Litigation | _____ Commercial _____ Oligomer _____ Score/Length |
| Searcher Prep or Review Time: _____ | _____ Fulltext | _____ Interference _____ SPDI _____ Encode/Transl |
| Online Time: _____ | _____ Other | _____ Other (specify) _____ |

=> d que stat 119

L6 3 SEA FILE=REGISTRY ABB=ON (AMMONIUM HYDROXIDE OR AMMONIUM CYANIDE OR AMMONIUM FLUORIDE OR AMMONIUM THIOCYANIDE)/CN
 L8 4 SEA FILE=REGISTRY ABB=ON (IRON OR RUTHENIUM OR COBALT OR NICKEL)/CN
 L9 149799 SEA FILE=HCAPLUS ABB=ON (L8 OR ?IRON? OR ?RUTHENIUM? OR ?COBALT? OR ?NICKEL?) (L) ?CATALYST?
 L10 314 SEA FILE=HCAPLUS ABB=ON L9 AND ?DINITRILE?
 L11 7 SEA FILE=HCAPLUS ABB=ON L10 AND (L6 OR ?AMMONIUM?(W) (?HYDROXID E? OR ?CYANIDE? OR ?FLUORIDE? OR ?THIOCYANID?))
 L12 7 SEA FILE=HCAPLUS ABB=ON L11 AND ?HYDROGEN?
 L13 6 SEA FILE=HCAPLUS ABB=ON L12 AND (PRD<20031112 OR PD<20031112)
 L19 6 SEA FILE=HCAPLUS ABB=ON L13 AND (?PROCESS? OR ?HYDROGENAT? OR ?MODIF?)

=> d ibib abs 119 1-6

L19 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:5923 HCAPLUS

DOCUMENT NUMBER: 138:75102

TITLE: Method and catalysts for the **hemihydrogenation** of **dinitriles** into aminonitriles

INVENTOR(S): Leconte, Philippe; Lopez, Joseph

PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.

SOURCE: PCT Int. Appl., 11 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|----------------|
| WO 2003000651 | A2 | 20030103 | WO 2002-FR2023 | 20020613 <-- |
| WO 2003000651 | A3 | 20030220 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| FR 2826364 | A1 | 20021227 | FR 2001-8245 | 20010622 <-- |
| FR 2826364 | B1 | 20050114 | | |
| CA 2449121 | AA | 20030103 | CA 2002-2449121 | 20020613 <-- |
| EP 1397346 | A2 | 20040317 | EP 2002-780841 | 20020613 <-- |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | |
| CN 1518538 | A | 20040804 | CN 2002-812500 | 20020613 <-- |
| BR 2002011014 | A | 20040810 | BR 2002-11014 | 20020613 <-- |
| JP 2004530719 | T2 | 20041007 | JP 2003-507058 | 20020613 <-- |
| RU 2260587 | C1 | 20050920 | RU 2004-101604 | 20020613 <-- |
| US 2004204603 | A1 | 20041014 | US 2004-481028 | 20040527 <-- |
| PRIORITY APPLN. INFO.: | | | FR 2001-8245 | A 20010622 <-- |
| | | | WO 2002-FR2023 | W 20020613 <-- |

OTHER SOURCE(S): MARPAT 138:75102

AB The **hemihydrogenation** of **dinitriles** (e.g.,

adiponitrile) into the corresponding aminonitriles (e.g., aminocapronitrile) is described using water and a **hydrogenation catalyst** system (e.g., Raney **nickel**, KOH, and Et₄NF) containing selecting agents.

L19 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:5922 HCAPLUS

DOCUMENT NUMBER: 138:75101

TITLE: Method and catalyst system for the **hemihydrogenation** of **dinitriles** into aminonitriles

INVENTOR(S): Leconte, Philippe; Lopez, Joseph; Marion, Philippe

PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.

SOURCE: PCT Int. Appl., 12 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|-----------------|----------------|
| WO 2003000650 | A2 | 20030103 | WO 2002-FR2019 | 20020613 <-- |
| WO 2003000650 | A3 | 20030220 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| FR 2826363 | A1 | 20021227 | FR 2001-8248 | 20010622 <-- |
| FR 2826363 | B1 | 20050114 | | |
| CA 2449120 | AA | 20030103 | CA 2002-2449120 | 20020613 <-- |
| EP 1397345 | A2 | 20040317 | EP 2002-780840 | 20020613 <-- |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | |
| BR 2002011038 | A | 20040622 | BR 2002-11038 | 20020613 <-- |
| CN 1518537 | A | 20040804 | CN 2002-812446 | 20020613 <-- |
| JP 2004530718 | T2 | 20041007 | JP 2003-507057 | 20020613 <-- |
| RU 2260588 | C1 | 20050920 | RU 2004-101605 | 20020613 <-- |
| US 2004220423 | A1 | 20041104 | US 2004-481027 | 20040527 <-- |
| PRIORITY APPLN. INFO.: | | | FR 2001-8248 | A 20010622 <-- |
| | | | WO 2002-FR2019 | W 20020613 <-- |

OTHER SOURCE(S): MARPAT 138:75101

AB The **hemihydrogenation** of **dinitriles** (e.g., adiponitrile) into the corresponding aminonitriles (e.g., 6-aminocapronitrile) is described using a Ni or Raney Ni catalyst doped with Rh or Ir.

L19 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:312051 HCAPLUS

DOCUMENT NUMBER: 136:325981

TITLE: Catalyst system and **process** for the **hydrogenation** of **dinitriles** into diamines and aminonitriles

INVENTOR(S): Allgeier, Alan M.; Koch, Theodore A.; Sengupta, Sourav

PATENT ASSIGNEE(S): K.
SOURCE: E. I. Du Pont de Nemours & Co., USA
U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|------------------|----------------|
| US 6376714 | B1 | 20020423 | US 2001-871102 | 20010531 <-- |
| TW 593235 | B | 20040621 | TW 2002-91110365 | 20020517 <-- |
| CA 2444442 | AA | 20021205 | CA 2002-2444442 | 20020524 <-- |
| WO 2002096862 | A2 | 20021205 | WO 2002-US16374 | 20020524 <-- |
| WO 2002096862 | A3 | 20030731 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| EP 1392646 | A2 | 20040303 | EP 2002-739372 | 20020524 <-- |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | |
| BR 2002010082 | A | 20040817 | BR 2002-10082 | 20020524 <-- |
| CN 1531523 | A | 20040922 | CN 2002-810915 | 20020524 <-- |
| JP 2004534778 | T2 | 20041118 | JP 2003-500042 | 20020524 <-- |
| PRIORITY APPLN. INFO.: | | | US 2001-871102 | A 20010531 <-- |
| | | | WO 2002-US16374 | W 20020524 <-- |

AB A **process** for converting **dinitriles** into diamines and/or aminonitriles consists of forming a reaction mixture that comprises: (1) a **dinitrile**; (2) **hydrogen**; (3) a catalyst comprising a Group VIII element; and (4) one or more **modifiers** selected from quaternary **ammonium hydroxides**, quaternary **ammonium cyanides**, quaternary **ammonium fluorides**, quaternary phosphonium hydroxides, and quaternary **ammonium thiocyanides**. The reaction mixture contains less than a 1:1 molar ratio of solvent and the **process** is carried out at a pressure and temperature sufficient to convert at least a portion of the **dinitrile** (e.g., 1,6-hexanedinitrile) into a diamine (e.g., 1,6-diaminohexane) and, optionally, an aminonitrile (e.g., 6-aminocapronitrile).

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:676740 HCAPLUS
DOCUMENT NUMBER: 135:227379
TITLE: Method and catalyst for **hydrogenating** nitriles into amines or aminonitriles
INVENTOR(S): Boschat, Vincent; Leconte, Philippe
PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|--------------|
| WO 2001066511 | A1 | 20010913 | WO 2001-FR687 | 20010307 <-- |
| W: AU, BR, BY, CA, CN, CZ, ID, IL, IN, JP, KR, MX, PL, RO, RU, SG, SK, TR, UA, US, VN, ZA | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR | | | | |
| FR 2806081 | A1 | 20010914 | FR 2000-2997 | 20000308 <-- |
| FR 2806081 | B1 | 20030314 | | |
| CA 2403210 | AA | 20010913 | CA 2001-2403210 | 20010307 <-- |
| EP 1265845 | A1 | 20021218 | EP 2001-913956 | 20010307 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| BR 2001009261 | A | 20030603 | BR 2001-9261 | 20010307 <-- |
| JP 2003525924 | T2 | 20030902 | JP 2001-565331 | 20010307 <-- |
| RU 2242460 | C2 | 20041220 | RU 2002-126613 | 20010307 <-- |
| US 2003144552 | A1 | 20030731 | US 2003-220821 | 20030110 <-- |
| US 6790994 | B2 | 20040914 | | |

PRIORITY APPLN. INFO.: FR 2000-2997 A 20000308 <--
 WO 2001-FR687 W 20010307 <--

AB A method for **hydrogenating** nitriles into amines, as well as the total or partial **hydrogenation** of **dinitriles** into diamines or aminonitrile compds., is described using **hydrogen** in the presence of a **hydrogenation catalyst** (e.g., Raney **nickel** containing Co) and a strong mineral base (e.g., KOH) preferably derived from an alkaline or alkaline-earth metal. The **catalyst** used is subjected to conditioning by mixing the **hydrogenation catalyst**, a specific amount of strong mineral base, and a solvent in which the strong mineral base is hardly soluble. The solvent is an amine compound such as hexamethylenediamine in the case of **hydrogenation** of adiponitrile into HMD and/or aminocapronitrile.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:548793 HCAPLUS

DOCUMENT NUMBER: 133:150260

TITLE: Procedure for the production of 2-(aminomethyl)-1,5-pentanediamine by the **hydrogenation** and amination of 2,4-dicyano-1-butene

INVENTOR(S): Fischer, Konrad; Richter, Frank; Bazanov, Anatoly; Timofeev, Alexandre; Zubritskaya, Natalja; Smirnova, Galina

PATENT ASSIGNEE(S): Bayer A.-G., Germany

SOURCE: Ger. Offen., 4 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|--------------|
| DE 19905277 | A1 | 20000810 | DE 1999-19905277 | 19990209 <-- |
| EP 1028104 | A1 | 20000816 | EP 2000-101607 | 20000127 <-- |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, | | | | |

IE, SI, LT, LV, FI, RO

US 2001005764 A1 20010628 US 2000-496067 20000201 <--

JP 2000229918 A2 20000822 JP 2000-30425 20000208 <--

PRIORITY APPLN. INFO.: DE 1999-19905277 A 19990209 <--

OTHER SOURCE(S): CASREACT 133:150260

AB 2-(Aminomethyl)-1,5-pentanediamine is prepared in high yield and selectivity by the reaction of 2,4-dicyano-1-butene with ammonia and **hydrogen** in the presence of a **cobalt**-based **catalyst** composition (containing 65% **cobalt**, 3.5% manganese, and 3% phosphoric acid).

L19 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:38575 HCAPLUS

DOCUMENT NUMBER: 112:38575

TITLE: Activation of commercially available **nickel** on alumina **catalyst**

AUTHOR(S): Scaros, Mike G.; Dryden, Hugh L., Jr.; Westrich, John P.; Goodmonson, Owen J.; Pilney, James R.

CORPORATE SOURCE: G. D. Searle and Co., Skokie, IL, USA

SOURCE: Chemical Industries (Dekker) (1988),
33(Catal. Org. React.), 419-29
CODEN: CHEIDI; ISSN: 0737-8025

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The activation of a Ni catalyst with KBH₄-NH₄OH-MeOH to give a product with **hydrogenation** activity similar to Raney Ni but without the pyrophoricity was described. The catalyst was used to **hydrogenate** a Me 2-alkynoate to a Me alkanoate and adiponitrile to 1,6-hexanediamine.

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L6 3 SEA FILE=REGISTRY ABB=ON (AMMONIUM HYDROXIDE OR AMMONIUM CYANIDE OR AMMONIUM FLUORIDE OR AMMONIUM THIOCYANIDE)/CN
 L8 4 SEA FILE=REGISTRY ABB=ON (IRON OR RUTHENIUM OR COBALT OR NICKEL)/CN
 L9 149799 SEA FILE=HCAPLUS ABB=ON (L8 OR ?IRON? OR ?RUTHENIUM? OR ?COBALT? OR ?NICKEL?) (L) ?CATALYST?
 L10 314 SEA FILE=HCAPLUS ABB=ON L9 AND ?DINITRILE?
 L11 7 SEA FILE=HCAPLUS ABB=ON L10 AND (L6 OR ?AMMONIUM?(W) (?HYDROXID E? OR ?CYANIDE? OR ?FLUORIDE? OR ?THIOCYANID?))
 L12 7 SEA FILE=HCAPLUS ABB=ON L11 AND ?HYDROGEN?
 L15 262 SEA FILE=USPATFULL ABB=ON L12 AND (PRD<20031112 OR PD<20031112)
 L16 260 SEA FILE=USPATFULL ABB=ON L15 AND ?PROCESS?
 L17 142 SEA FILE=USPATFULL ABB=ON L16 AND ?HYDROGENAT?
 L18 16 SEA FILE=USPATFULL ABB=ON L17 AND ?MODIFIER?

=> d ibib abs 118 1-16

L18 ANSWER 1 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2004:159388 USPATFULL

TITLE: Polar group-containing olefin copolymer,
process for preparing the same, thermoplastic
 resin composition containing the copolymer, and uses
 thereof

INVENTOR(S): Imuta, Junichi, Sodegaura-shi, JAPAN
 Kashiwa, Norio, Sodegaura-shi, JAPAN
 Ota, Seiji, Sodegaura-shi, JAPAN
 Moriya, Satoru, Ichihara-shi, JAPAN
 Nobori, Tadahito, Sodegaura-shi, JAPAN
 Mizutani, Kazumi, Sodegaura-shi, JAPAN

PATENT ASSIGNEE(S): Mitsui Chemicals, Inc. (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|---------------|
| PATENT INFORMATION: | US 2004122192 | A1 | 20040624 |
| APPLICATION INFO.: | US 2003-713278 | A1 | 20031117 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2001-947460, filed on 7 Sep 2001, PENDING | | |

| | NUMBER | DATE | |
|-----------------------|----------------|----------|-----|
| PRIORITY INFORMATION: | JP 2000-272345 | 20000907 | <-- |
| | JP 2000-345736 | 20001113 | <-- |
| | JP 2000-345737 | 20001113 | <-- |
| | JP 2000-345738 | 20001113 | <-- |
| | JP 2000-345814 | 20001113 | <-- |
| | JP 2000-345815 | 20001113 | <-- |
| | JP 2000-345816 | 20001113 | <-- |
| | JP 2000-362632 | 20001129 | <-- |

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: BIRCH STEWART KOLASCH & BIRCH, PO BOX 747, FALLS CHURCH, VA, 22040-0747

NUMBER OF CLAIMS: 27

EXEMPLARY CLAIM: 1

LINE COUNT: 8328

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention is a polar group-containing olefin copolymer
 having excellent adhesion properties to metals or polar resins and

excellent compatibility therewith. A **process** for preparing the copolymer, a thermoplastic resin composition containing the copolymer, and uses thereof are also described. The polar group-containing olefin copolymer comprises a constituent unit derived from an α -olefin of 2 to 20 carbon atoms, and a constituent unit derived from a straight-chain, branched or cyclic polar group-containing monomer having at the end a polar group such as a hydroxyl group or an epoxy group and/or a constituent unit derived from a macromonomer having at the end a polymer segment obtained by anionic polymerization, ring-opening polymerization or polycondensation. The polar group-containing olefin copolymer and the thermoplastic resin composition containing the copolymer are used for films, sheets, **modifiers**, building/civil engineering materials, automobile exterior trim, electric/electronic parts, coating bases, compatibilizing agents, etc.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 2 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2004:152255 USPATFULL

TITLE: 2-Heteroaryl-3,4-dihydro-2h-pyrrole derivatives and the use thereof as pesticides

INVENTOR(S): Plant, Andrew, Berkshire, UNITED KINGDOM
Fischer, R?uuml,diger, Pulheim, GERMANY, FEDERAL
REPUBLIC OF
Seitz, Thomas, Langenfeld, GERMANY, FEDERAL REPUBLIC OF
Erdelen, Christoph, Leichlingen, GERMANY, FEDERAL
REPUBLIC OF
Turberg, Andreas, Haan, GERMANY, FEDERAL REPUBLIC OF
Hansen, Olaf, Leichlingen, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2004116477 | A1 | 20040617 |
| APPLICATION INFO.: | US 2004-467879 | A1 | 20040112 (10) |
| | WO 2002-EP992 | | 20020131 |

| | NUMBER | DATE |
|-----------------------|--|----------|
| PRIORITY INFORMATION: | DE 2001-106457 | 20010213 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | BAYER CROPSCIENCE LP, Patent Department, 100 BAYER ROAD, PITTSBURGH, PA, 15205-9741 | |
| NUMBER OF CLAIMS: | 24 | |
| EXEMPLARY CLAIM: | 1 | |
| LINE COUNT: | 4692 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel Δ .sup.1-pyrrolines of the formula (I) ##STR1##

in which

R.sup.1, R.sup.2, R.sup.3 and Het have the meanings given in the description,

a plurality of **processes** for preparing these compounds and their use for controlling pests, and also novel intermediates and **processes** for their preparation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 3 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2004:133928 USPATFULL

TITLE: Pyrazolyl pyrimidines

INVENTOR(S): Fischer, Rudiger, Pulheim, GERMANY, FEDERAL REPUBLIC OF
 Alig, Bernd, Konigswinter, GERMANY, FEDERAL REPUBLIC OF
 Bretschneider, Thomas, Lohmar, GERMANY, FEDERAL
 REPUBLIC OF
 Es-Sayed, Mazen, Langenfeld, GERMANY, FEDERAL REPUBLIC
 OF
 Erdelen, Christoph, Leichlingen, GERMANY, FEDERAL
 REPUBLIC OF
 Losel, Peter, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
 Reckmann, Udo, Koln, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2004102465 | A1 | 20040527 |
| APPLICATION INFO.: | US 2003-468371 | A1 | 20031211 (10) |
| | WO 2002-EP1400 | | 20020211 |

| | NUMBER | DATE |
|--|--|--------------|
| PRIORITY INFORMATION: | DE 2001-108480 | 20010222 <-- |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | BAYER CROPSCIENCE LP, Patent Department, 100 BAYER ROAD, PITTSBURGH, PA, 15205-9741 | |
| NUMBER OF CLAIMS: | 22 | |
| EXEMPLARY CLAIM: | 1 | |
| LINE COUNT: | 4065 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |
| AB | This invention relates to novel pyrazolylpyrimidines of the formula ##STR1## | |

in which R.sup.1, R.sup.2, X, n, Y, Z and R have the meanings given in
 the disclosure, to a plurality of **processes** for preparing
 these substances, and to their use for controlling pests.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 4 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2004:101771 USPATFULL

TITLE: Pyridyl pyrimidines for use as pesticides

INVENTOR(S): Bretschneider, Thomas, Lohmar, GERMANY, FEDERAL
 REPUBLIC OF
 Es-Sayed, Mazen, Langenfeld, GERMANY, FEDERAL REPUBLIC
 OF
 Fischer, Rudiger, Langenfeld, GERMANY, FEDERAL REPUBLIC
 OF
 Maurer, Fritz, Monheim, GERMANY, FEDERAL REPUBLIC OF
 Erdelen, Christoph, Leichlingen, GERMANY, FEDERAL
 REPUBLIC OF
 Losel, Peter, Leverkusen, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2004077641 | A1 | 20040422 |
| APPLICATION INFO.: | US 2003-468526 | A1 | 20030819 (10) |
| | WO 2002-EP1403 | | 20020211 |

| | NUMBER | DATE | |
|--|---|----------|-----|
| PRIORITY INFORMATION: | DE 2001-108481 | 20010222 | <-- |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | BAYER CROPSCIENCE LP, Patent Department, 100 BAYER ROAD, PITTSBURGH, PA, 15205-9741 | | |
| NUMBER OF CLAIMS: | 25 | | |
| EXEMPLARY CLAIM: | 1 | | |
| LINE COUNT: | 5031 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |
| AB | Novel pyridylpyrimidines of the formula ##STR1## | | |

in which

R.sup.1, R.sup.2, X, n, Y, Z and R have the meanings given in the description,

a plurality of **processes** for preparing these compounds and their use for controlling pests, and also novel intermediates and **process** for their preparation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 5 OF 16 USPATFULL on STN

| | | |
|---------------------|---|-----------|
| ACCESSION NUMBER: | 2004:7809 | USPATFULL |
| TITLE: | Novel polyamine analog conjugates and quinone conjugates as therapies for cancers and prostate diseases | |
| INVENTOR(S): | Frydman, Benjamin, Madison, WI, UNITED STATES Marton, Laurence J., Palo Alto, CA, UNITED STATES | |
| PATENT ASSIGNEE(S): | SLIL Biomedical Corporation, Madison, WI, UNITED STATES (U.S. corporation) | |

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 2004006049 | A1 | 20040108 |
| APPLICATION INFO.: | US 2003-385224 | A1 | 20030310 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2000-561172, filed on 27 Apr 2000, PENDING | | |

| | NUMBER | DATE | |
|--|--|---------------|-----|
| PRIORITY INFORMATION: | US 1999-131809P | 19990430 (60) | <-- |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | Robert K. Cerpa, Morrison & Foerster LLP, 35th Floor, 555 W. 5th Street, Los Angeles, CA, 90013 | | |
| NUMBER OF CLAIMS: | 37 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 67 Drawing Page(s) | | |
| LINE COUNT: | 4669 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |
| AB | Peptide conjugates in which cytotoxic and cytostatic agents, such as polyamine analogs or naphthoquinones, are conjugated to a polypeptide recognized and cleaved by enzymes such as prostate-specific antigen (PSA) and cathepsin B are provided, as well as compositions comprising these conjugates. Methods of using these conjugates in the treatment of prostate diseases are also provided. | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 6 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2003:306824 USPATFULL

TITLE: C2-phenyl-substituted cyclic keto-enols used as pesticides and herbicides

INVENTOR(S): Ruther, Michael, Langenfeld, GERMANY, FEDERAL REPUBLIC OF
 Hagemann, Hermann, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
 Schneider, Udo, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
 Dollinger, Markus, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
 Dahmen, Peter, Neuss, GERMANY, FEDERAL REPUBLIC OF
 Wachendorff-Neumann, Ulrike, Neuwied, GERMANY, FEDERAL REPUBLIC OF
 Fischer, Rainer, Monheim, GERMANY, FEDERAL REPUBLIC OF
 Graff, Alan, Leverkusen, GERMANY, FEDERAL REPUBLIC OF
 Bretschneider, Thomas, Lohmar, GERMANY, FEDERAL REPUBLIC OF
 Erdelen, Christoph, Leichlingen, GERMANY, FEDERAL REPUBLIC OF
 Drewes, Mark Wilhelm, Langenfeld, GERMANY, FEDERAL REPUBLIC OF
 Feucht, Dieter, Monheim, GERMANY, FEDERAL REPUBLIC OF
 Lieb, Folker, Leverkusen, GERMANY, FEDERAL REPUBLIC OF

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2003216260 | A1 | 20031120 |
| APPLICATION INFO.: | US 2002-239331 | A1 | 20021216 (10) |
| | WO 2001-EP3215 | | 20010321 |

| | NUMBER | DATE |
|-----------------------|---|----------|
| PRIORITY INFORMATION: | DE 2000-10016544 | 20000403 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | BAYER POLYMERS LLC, 100 BAYER ROAD, PITTSBURGH, PA, 15205 | |
| NUMBER OF CLAIMS: | 21 | |
| EXEMPLARY CLAIM: | 1 | |
| LINE COUNT: | 4834 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel C.sub.2-phenyl-substituted cyclic ketoenols of the formula (I) ##STR1##

in which

W, X, Y, Z and CKE are as defined in the description, to **processes** for their preparation and to their use as pesticides and herbicides.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 7 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2002:280758 USPATFULL

TITLE: Polar group-containing olefin copolymer, **process** for preparing the same, thermoplastic

resin composition containing the copolymer, and uses thereof

INVENTOR(S): Imuta, Junichi, Sodegaura-shi, JAPAN
 Kashiwa, Nori, Sodegaura-shi, JAPAN
 Ota, Seiji, Sodegaura-shi, JAPAN
 Moriya, Satoru, Ichihara-shi, JAPAN
 Nobori, Tadahito, Sodegaura-shi, JAPAN
 Mizutani, Kazumi, Sodegaura-shi, JAPAN

| | NUMBER | KIND | DATE | |
|---------------------|----------------|------|----------|-----|
| PATENT INFORMATION: | US 2002156207 | A1 | 20021024 | <-- |
| APPLICATION INFO.: | US 2001-947460 | A1 | 20010907 | (9) |

| | NUMBER | DATE | |
|-----------------------|----------------|----------|-----|
| PRIORITY INFORMATION: | JP 2000-272345 | 20000907 | <-- |
| | JP 2000-345736 | 20001113 | <-- |
| | JP 2000-345737 | 20001113 | <-- |
| | JP 2000-345738 | 20001113 | <-- |
| | JP 2000-345814 | 20001113 | <-- |
| | JP 2000-345815 | 20001113 | <-- |
| | JP 2000-345816 | 20001113 | <-- |
| | JP 2000-362632 | 20001129 | <-- |

DOCUMENT TYPE: Utility
 FILE SEGMENT: APPLICATION
 LEGAL REPRESENTATIVE: BIRCH STEWART KOLASCH & BIRCH, PO BOX 747, FALLS CHURCH, VA, 22040-0747

NUMBER OF CLAIMS: 27
 EXEMPLARY CLAIM: 1
 LINE COUNT: 8062

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention is intended to provide a polar group-containing olefin copolymer having excellent adhesion properties to metals or polar resins and excellent compatibility therewith, a **process** for preparing the copolymer, a thermoplastic resin composition containing the copolymer, and uses thereof. The polar group-containing olefin copolymer comprises a constituent unit derived from an α -olefin of 2 to 20 carbon atoms, and a constituent unit derived from a straight-chain, branched or cyclic polar group-containing monomer having at the end a polar group such as a hydroxyl group or an epoxy group and/or a constituent unit derived from a macromonomer having at the end a polymer segment obtained by anionic polymerization, ring-opening polymerization or polycondensation. The polar group-containing olefin copolymer can be prepared by polymerizing the α -olefin with the polar group-containing monomer and/or the macromonomer in the presence of a metallocene catalyst. The polar group-containing olefin copolymer and the thermoplastic resin composition containing the copolymer are used for films, sheets, **modifiers**, building/civil engineering materials, automobile exterior trim, electric/electronic parts, coating bases, compatibilizing agents, etc.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 8 OF 16 USPATFULL on STN

ACCESSION NUMBER: 2002:88674 USPATFULL

TITLE: Environmentally friendly **process** for the **hydrogenation of dinitriles**

INVENTOR(S): Allgeier, Alan M., Wilmington, DE, United States
 Koch, Theodore A., Wilmington, DE, United States

PATENT ASSIGNEE(S): Sengupta, Sourav K., Wilmington, DE, United States
E. I. du Pont de Nemours and Company, Wilmington, DE,
United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|-----------------------|--|------|----------|-----|
| PATENT INFORMATION: | US 6376714 | B1 | 20020423 | <-- |
| APPLICATION INFO.: | US 2001-871102 | | 20010531 | (9) |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | GRANTED | | | |
| PRIMARY EXAMINER: | Davis, Brian J. | | | |
| LEGAL REPRESENTATIVE: | Deitch, Gerald E. | | | |
| NUMBER OF CLAIMS: | 16 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| NUMBER OF DRAWINGS: | 0 Drawing Figure(s); 0 Drawing Page(s) | | | |
| LINE COUNT: | 574 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB **Process** for converting a **dinitrile** to a diamine and optionally an aminonitrile, in which a Group VIII element catalyst is treated with a **modifier** either before or during a substantially solvent-free **hydrogenation** reaction in which the **dinitrile** is contacted with **hydrogen** in the presence of the catalyst.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 9 OF 16 USPATFULL on STN

ACCESSION NUMBER: 95:5974 USPATFULL
TITLE: Oil soluble amino-substituted polymers containing graft polymer segments derived from aromatic nitrogen-containing monomers
INVENTOR(S): Patil, Abhimanyu O., Westfield, NJ, United States
Datta, Sudhin, Matawan, NJ, United States
Lundberg, Robert D., Bridgewater, NJ, United States
PATENT ASSIGNEE(S): Exxon Chemical Patents Inc., Linden, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|-----------------------|--|------|----------|-----|
| PATENT INFORMATION: | US 5382632 | | 19950117 | <-- |
| APPLICATION INFO.: | US 1993-130611 | | 19931001 | (8) |
| DISCLAIMER DATE: | 20110111 | | | |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1989-449998, filed on 13 Dec 1989, now patented, Pat. No. US 5278240 | | | |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | Granted | | | |
| PRIMARY EXAMINER: | Lipman, Bernard | | | |
| LEGAL REPRESENTATIVE: | Kowalchyn, T. V. | | | |
| NUMBER OF CLAIMS: | 19 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | | | |
| LINE COUNT: | 2454 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The novel polymers of the present invention are prepared by graft polymerization of at least one aromatic nitrogen-containing monomer onto an amino-substituted polymer (e.g., an ethylene alpha-olefin interpolymer substituted by primary amino or secondary amino groups). Preferred aromatic nitrogen-containing moieties are illustrated by aniline, and preferred amino-substituted interpolymers comprise amino-substituted ethylene propylene norbornene terpolymers. The

polymers of this invention are oil soluble and are useful as dispersant and antioxidant additives in oleaginous compositions and are further useful in electrical, textile and other applications.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 10 OF 16 USPATFULL on STN

ACCESSION NUMBER: 94:3862 USPATFULL
 TITLE: Oil soluble amino-substituted polymers containing graft polymer segments derived from aromatic nitrogen-containing monomers
 INVENTOR(S): Patil, Abhimanyu O., Westfield, NJ, United States
 Datta, Sudhin, Matawan, NJ, United States
 Lundberg, Robert D., Bridgewater, NJ, United States
 PATENT ASSIGNEE(S): Exxon Chemical Patents Inc., Linden, NJ, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|-----------------------|--|------|----------|-----|
| PATENT INFORMATION: | US 5278240 | | 19940111 | <-- |
| APPLICATION INFO.: | US 1989-449998 | | 19891213 | (7) |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | Granted | | | |
| PRIMARY EXAMINER: | Lipman, Bernard | | | |
| LEGAL REPRESENTATIVE: | Murray, Jr., J. B., Kowalchyn, T. V. | | | |
| NUMBER OF CLAIMS: | 43 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| NUMBER OF DRAWINGS: | 1 Drawing Figure(s); 1 Drawing Page(s) | | | |
| LINE COUNT: | 2467 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The novel polymers of the present invention are prepared by graft polymerization of at least one aromatic nitrogen-containing monomer onto an amino-substituted polymer (e.g., an ethylene alpha-olefin interpolymer substituted by primary amino or secondary amino groups). Preferred aromatic nitrogen-containing moieties are illustrated by aniline, and preferred amino-substituted interpolymers comprise amino-substituted ethylene propylene norbornene terpolymers. The polymers of this invention are oil soluble and are useful as dispersant and antioxidant additives in oleaginous compositions and are further useful in electrical, textile and other applications.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 11 OF 16 USPATFULL on STN

ACCESSION NUMBER: 81:13436 USPATFULL
 TITLE: Fabric bleaching and stain removal compositions
 INVENTOR(S): Sakkab, Nabil Y., Maineville, OH, United States
 PATENT ASSIGNEE(S): The Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---------------------|--------------|------|----------|-----|
| PATENT INFORMATION: | US 4255273 | | 19810310 | <-- |
| APPLICATION INFO.: | US 1979-2415 | | 19790110 | (6) |

| | NUMBER | DATE | |
|-----------------------|---------------|----------|-----|
| PRIORITY INFORMATION: | PH 1978-20642 | 19780111 | <-- |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |

PRIMARY EXAMINER: Weinblatt, Mayer
 LEGAL REPRESENTATIVE: Gould, William H., O'Flaherty, Thomas H., Witte, Richard C.

NUMBER OF CLAIMS: 45
 EXEMPLARY CLAIM: 1
 NUMBER OF DRAWINGS: 1 Drawing Figure(s); 1 Drawing Page(s)
 LINE COUNT: 2686

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Improved fabric bleaching and stain removal are achieved by use of a composition comprising a photoactivator and a cationic substance. The photoactivator is a porphine or a mono-, di-, tri-, or tetra-aza porphine, solubilized with anionic, nonionic and/or cationic substituent groups, and metal free or metallated with Zn(II), Ca(II), Cd(II), Mg(II), Sc(III), Al(III) or Sn(IV). The cationic substance is preferably one that, in a laundry bath, itself performs a desired function such as acting as fabric softener, electrostatic control agent, surfactant, or germicide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 12 OF 16 USPATFULL on STN

ACCESSION NUMBER: 80:14878 USPATFULL

TITLE: Haloalkyl hydroxy-aromatic condensation products as fuel additives

INVENTOR(S): Ripple, David E., Kirtland, OH, United States

PATENT ASSIGNEE(S): The Lubrizol Corporation, Wickliffe, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 4194886 | | 19800325 <-- |
| APPLICATION INFO.: | US 1979-9715 | | 19790205 (6) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1978-901174, filed on 28 Apr 1978, now Defensive Publication No. which is a division of Ser. No. US 1976-684818, filed on 10 May 1976, now patented, Pat. No. US 4108783 which is a continuation-in-part of Ser. No. US 1974-459424, filed on 9 Apr 1974, now abandoned | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Douglas, Winston A. | | |
| ASSISTANT EXAMINER: | Howard, J. V. | | |
| LEGAL REPRESENTATIVE: | Adams, Jr., James W., Keller, Raymond F. | | |
| NUMBER OF CLAIMS: | 7 | | |
| EXEMPLARY CLAIM: | 1 | | |
| LINE COUNT: | 1078 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Condensation products made by reacting an alpha-haloalkyl hydroxy-aromatic compound also having at least one non-fused hydrocarbyl substituent with at least one olefinic nitrile, carboxylic acid or carboxylic acid derivative are useful as additives for fuels and lubricants. The number of carbon atoms in the aromatic hydrocarbyl compound's substituents are each about 25 while the haloalkyl group contains from one to about 36 carbons. The acid or nitrile reactant usually contains three to about forty carbons. Products made from halomethyl alkyl-substituted phenols and α,β -olefinic diacid derivatives such as maleic anhydride are particularly useful. Similarly useful products can be made from these condensation products by further reacting their acid, acid derivative or nitrile groups with alcohols, polyols, monoamines, polyamines, metal salts or metals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 13 OF 16 USPATFULL on STN

ACCESSION NUMBER: 79:50997 USPATFULL

TITLE: Haloalkyl hydroxy-aromatic condensation products as fuel and lubricant additives

INVENTOR(S): Ripple, David E., Kirtland, OH, United States

PATENT ASSIGNEE(S): The Lubrizol Corporation, Wickliffe, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|-----------------------|---|------|----------|-----|
| PATENT INFORMATION: | US 4179449 | | 19791218 | <-- |
| APPLICATION INFO.: | US 1978-932977 | | 19780811 | (5) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1976-684818, filed on 10 May 1976, now patented, Pat. No. US 4108783 which is a continuation-in-part of Ser. No. US 1974-459424, filed on 9 Apr 1974, now abandoned | | | |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | Granted | | | |
| PRIMARY EXAMINER: | Rotman, Alan L. | | | |
| ASSISTANT EXAMINER: | Dentz, B. I. | | | |
| LEGAL REPRESENTATIVE: | Adams, Jr., James W., Hall, Daniel N. | | | |
| NUMBER OF CLAIMS: | 19 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| LINE COUNT: | 1097 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Condensation products made by reacting an alpha-haloalkyl hydroxy-aromatic compound also having at least one non-fused hydrocarbyl substituent with at least one olefinic nitrile, carboxylic acid or carboxylic acid derivative are useful as additives for fuels and lubricants. The number of carbon atoms in the aromatic hydrocarbyl compound's substituents are each about 25 while the haloalkyl group contains from one to about 36 carbons. The acid or nitrile reactant usually contains three to about forty carbons. Products made from halomethyl alkyl-substituted phenols and α,β -olefinic diacid derivatives such as maleic anhydride are particularly useful. Similarly useful products can be made from these condensation products by further reacting their acid, acid derivative or nitrile groups with alcohols, polyols, monoamines, polyamines, metal salts or metals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 14 OF 16 USPATFULL on STN

ACCESSION NUMBER: 79:47434 USPATFULL

TITLE: Haloalkyl hydroxy-aromatic condensation products as lubricant additives

INVENTOR(S): Ripple, David E., Kirtland, OH, United States

PATENT ASSIGNEE(S): The Lubrizol Corporation, Wickliffe, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|-----------------------|---|------|----------|-----|
| PATENT INFORMATION: | US 4176077 | | 19791127 | <-- |
| APPLICATION INFO.: | US 1978-901174 | | 19780428 | (5) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 1976-684818, filed on 10 May 1976, now patented, Pat. No. US 4108783 which is a continuation-in-part of Ser. No. US 1974-459424, filed on 9 Apr 1974, now abandoned | | | |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Gantz, Delbert E.
ASSISTANT EXAMINER: Metz, Andrew
LEGAL REPRESENTATIVE: Adams, Jr., James W., Hall, Daniel N.
NUMBER OF CLAIMS: 16
EXEMPLARY CLAIM: 1
LINE COUNT: 1095

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Condensation products made by reacting an alphahaloalkyl hydroxy-aromatic compound also having at least one non-fused hydrocarbyl substituent with at least one olefinic nitrile, carboxylic acid or carboxylic acid derivative are useful as additives for fuels and lubricants. The number of carbon atoms in the aromatic hydrocarbyl compound's substituents are each about 25 while the haloalkyl group contains from one to about 36 carbons. The acid or nitrile reactant usually contains three to about forty carbons. Products made from halomethyl alkyl-substituted phenols and α,β -olefinic diacid derivatives such as maleic anhydride are particularly useful. Similarly useful products can be made from these condensation products by further reacting their acid, acid derivative or nitrile groups with alcohols, polyols, monoamines, polyamines, metal salts or metals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 15 OF 16 USPATFULL on STN

ACCESSION NUMBER: 78:45629 USPATFULL
TITLE: Haloalkyl hydroxy-aromatic condensation products as fuel and lubricant additives
INVENTOR(S): Ripple, David Eugene, Kirtland, OH, United States
PATENT ASSIGNEE(S): The Lubrizol Corporation, Wickliffe, OH, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 4108783 | | 19780822 <-- |
| APPLICATION INFO.: | US 1976-684818 | | 19760510 (5) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1974-459424, filed on 9 Apr 1974, now abandoned | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | Granted | | |
| PRIMARY EXAMINER: | Gantz, Delbert E. | | |
| ASSISTANT EXAMINER: | Metz, Andrew H. | | |
| LEGAL REPRESENTATIVE: | Adams, Jr., James W., Hall, Daniel N., Khayat, S. I. | | |
| NUMBER OF CLAIMS: | 22 | | |
| EXEMPLARY CLAIM: | 1 | | |
| LINE COUNT: | 1098 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Condensation products made by reacting an alphahaloalkyl hydroxy-aromatic compound also having at least one non-fused hydrocarbyl substituent with at least one olefinic nitrile, carboxylic acid or carboxylic acid derivative are useful as additives for fuels and lubricants. The number of carbon atoms in the aromatic hydrocarbyl compound's substituents are each about 25 while the haloalkyl group contains from one to about 36 carbons. The acid or nitrile reactant usually contains three to about forty carbons. Product made from halomethyl alkyl-substituted phenols and α,β -olefinic diacid derivatives such as maleic anhydride are particularly useful. Similarly useful products can be made from these condensation products by further reacting their acid, acid derivative or nitrile groups with alcohols,

polyols, monoamines, polyamines, metal salts or metals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 16 OF 16 USPATFULL on STN

ACCESSION NUMBER: 77:62700 USPATFULL

TITLE: Polythiol sealants

INVENTOR(S): Doss, Richard C., Bartlesville, OK, United States

Murtha, Timothy P., Bartlesville, OK, United States

PATENT ASSIGNEE(S): Phillips Petroleum Company, Bartlesville, OK, United States (U.S. corporation)

| | NUMBER | KIND | DATE | |
|---------------------|--------------------|-------|--------------|-----|
| | ----- | ----- | ----- | |
| PATENT INFORMATION: | US 4060519 | | 19771129 | <-- |
| APPLICATION INFO.: | US 1976-662779 | | 19760301 (5) | |
| DOCUMENT TYPE: | Utility | | | |
| FILE SEGMENT: | Granted | | | |
| PRIMARY EXAMINER: | Griffin, Ronald W. | | | |
| NUMBER OF CLAIMS: | 14 | | | |
| EXEMPLARY CLAIM: | 1 | | | |
| LINE COUNT: | 469 | | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Naphthalene and alkylated naphthalenes are useful as sulfur-solubilizers in coating and sealant formulations based on polymercaptan-terminated polymers. In one embodiment, sealant and coating formulations are prepared by curing a mixture of (a) a polymercaptan-terminated polymer, (b) naphthalene or alkylated naphthalenes as sulfur-solubilizers containing dissolved sulfur, and (c) a curing agent.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d ibib abs hitstr l4 1-4

L4 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:409272 HCAPLUS
 DOCUMENT NUMBER: 142:463356
 TITLE: Use of modifiers in a **dinitrile** hydrogenation process
 INVENTOR(S): **Allgeier, Alan Martin**
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 4 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|---------------------|-----------------|----------|
| US 2005101797 | A1 | 20050512 | US 2003-713535 | 20031112 |
| PRIORITY APPLN. INFO.: | | | US 2003-713535 | 20031112 |
| OTHER SOURCE(S): | | CASREACT 142:463356 | | |

AB There is disclosed catalytic process for hydrogenating a **dinitrile** (adiponitrile) to produce both aminocapronitrile and hexamethylenediamine in which the **dinitrile** is contacted with hydrogen in the presence of a catalyst and a modifier selected from the group consisting of quaternary ammonium hydroxides, quaternary ammonium cyanides, quaternary ammonium fluorides and quaternary ammonium thiocyanides, quaternary phosphonium hydroxide, carbon monoxide, and hydrogen cyanide. Thus, a 1 L-stainless steel pressure vessel was charged with 216 g adiponitrile, 20 g of a powdered reduced iron catalyst, and 0.2 g tetrabutylammonium cyanide (modifier), sealed, purged with H, charged with 225 g NH₃, heated to 150°, and pressurized to 4,500 psi for 315 min to give a reaction mix. comprising of adiponitrile 21, 6-aminocapronitrile 57, and hexamethylenediamine 21 weight% vs. 12, 45, and 36 weight%, resp., without modifier.

IT 74-90-8, Hydrogen cyanide, uses 630-08-0, Carbon monoxide, uses 7439-89-6, Iron, uses 7440-02-0, Nickel, uses 7440-18-8, Ruthenium, uses 7440-48-4, Cobalt, uses 10424-65-4, Tetramethylammonium hydroxide pentahydrate 10442-39-4, Tetrabutylammonium cyanide 13435-20-6, Tetraethylammonium cyanide
 RL: CAT (Catalyst use); USES (Uses)
 (use of quaternary ammonium compds. as modifiers for catalytic hydrogenation of **dinitrile** to diamine or aminonitrile)

RN 74-90-8 HCAPLUS
 CN Hydrocyanic acid (8CI, 9CI) (CA INDEX NAME)

N
 |||
 CH

RN 630-08-0 HCAPLUS
 CN Carbon monoxide (8CI, 9CI) (CA INDEX NAME)



RN 7439-89-6 HCAPLUS
CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

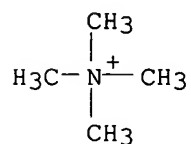
RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 10424-65-4 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate (9CI) (CA INDEX NAME)



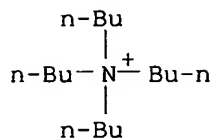
● OH⁻

● 5 H₂O

RN 10442-39-4 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, cyanide (9CI) (CA INDEX NAME)

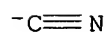
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CRN 10549-76-5
CMF C16 H36 N



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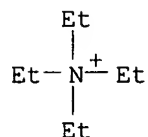
CRN 57-12-5
CMF C N



RN 13435-20-6 HCAPLUS
CN Ethanaminium, N,N,N-triethyl-, cyanide (9CI) (CA INDEX NAME)

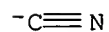
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CRN 66-40-0
CMF C8 H20 N

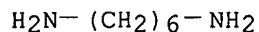


CM 2

CRN 57-12-5
CMF C N



IT 124-09-4P, Hexamethylenediamine, preparation 2432-74-8P,
6-Aminocapronitrile
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)
(use of quaternary ammonium compds. as modifiers for catalytic
hydrogenation of **dinitrile** to diamine or aminonitrile)
RN 124-09-4 HCAPLUS
CN 1,6-Hexanediamine (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2432-74-8 HCAPLUS
 CN Hexanenitrile, 6-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

H₂N-(CH₂)₅-CN

IT 111-69-3, Adiponitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (use of quaternary ammonium compds. as modifiers for catalytic
 hydrogenation of dinitrile to diamine or aminonitrile)
 RN 111-69-3 HCAPLUS
 CN Hexanedinitrile (9CI) (CA INDEX NAME)

NC-(CH₂)₄-CN

L4 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2003:396817 HCAPLUS
 DOCUMENT NUMBER: 138:401408
 TITLE: Process for the preparation of tertiary amines from
 primary amines and nitriles
 INVENTOR(S): Whittle, Kelley Moran; Allgeier, Alan Martin
 ; Higley, David Page; Gannett, Thomas Papin
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA
 SOURCE: PCT Int. Appl., 16 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|--|----------|--|------------|
| WO 2003042134 | A2 | 20030522 | WO 2002-US35495 | 20021105 |
| WO 2003042134 | A3 | 20031120 | | |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW | | | |
| RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| US 2003135052 | A1 | 20030717 | US 2001-53073 | 20011113 |
| US 6600075 | B2 | 20030729 | | |
| CA 2466442 | AA | 20030522 | CA 2002-2466442 | 20021105 |
| EP 1444193 | A2 | 20040811 | EP 2002-797064 | 20021105 |
| R: | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | |
| BR 2002014193 | A | 20040831 | BR 2002-14193 | 20021105 |
| JP 2005511620 | T2 | 20050428 | JP 2003-543974 | 20021105 |
| PRIORITY APPLN. INFO.: | | | US 2001-53073 | A 20011113 |
| | | | WO 2002-US35495 | W 20021105 |
| OTHER SOURCE(S): | | | CASREACT 138:401408; MARPAT 138:401408 | |

AB Disclosed is a method for preparing tertiary amine compds. (A-R-CH₂)₂N-R'-A' [R, R' = (cyclo)aliphatic, heterocyclic; A, A' = H, CN, amide, (cyclo)aliphatic, etc.] from primary amines and nitriles in the presence of hydrogen gas and a metal catalyst, or metal-containing catalyst composition at a temperature from about 50° to about 200° and at a pressure from about 100 psig to 1500 psig. The primary amines and the nitriles used in the process may be diamines and/or dinitriles, or may be combinations of primary amines and/or nitriles. For instance, 5% Pd/Al (42:1 nitrile:catalyst), methylamine (40% aq, 0.27 mol) and adiponitrile (1.1 mol) are reacted in an autoclave at 110° at 500 psig of H₂ for 2 h. This resulted in the formation of 41% bis(5-cyanopentyl)aminomethane with 47% recovered adiponitrile. Scope of reactants and stoichiometry are evaluated in the examples.

IT 111-69-3, Adiponitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (process for preparation of tertiary amines from primary amines and nitriles)

RN 111-69-3 HCAPLUS
 CN Hexanedinitrile (9CI) (CA INDEX NAME)

NC- (CH₂)₄-CN

L4 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2002:312051 HCAPLUS
 DOCUMENT NUMBER: 136:325981
 TITLE: Catalyst system and process for the hydrogenation of dinitriles into diamines and aminonitriles
 INVENTOR(S): Allgeier, Alan M.; Koch, Theodore A.; Sengupta, Sourav K.
 PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA
 SOURCE: U.S., 6 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| US 6376714 | B1 | 20020423 | US 2001-871102 | 20010531 |
| TW 593235 | B | 20040621 | TW 2002-91110365 | 20020517 |
| CA 2444442 | AA | 20021205 | CA 2002-2444442 | 20020524 |
| WO 2002096862 | A2 | 20021205 | WO 2002-US16374 | 20020524 |
| WO 2002096862 | A3 | 20030731 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1392646 | A2 | 20040303 | EP 2002-739372 | 20020524 |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

BR 2002010082 A 20040817 BR 2002-10082 20020524

CN 1531523 A 20040922 CN 2002-810915 20020524

JP 2004534778 T2 20041118 JP 2003-500042 20020524

PRIORITY APPLN. INFO.: US 2001-871102 A 20010531

WO 2002-US16374 W 20020524

AB A process for converting **dinitriles** into diamines and/or aminonitriles consists of forming a reaction mixture that comprises: (1) a **dinitrile**; (2) hydrogen; (3) a catalyst comprising a Group VIII element; and (4) one or more modifiers selected from quaternary ammonium hydroxides, quaternary ammonium cyanides, quaternary ammonium fluorides, quaternary phosphonium hydroxides, and quaternary ammonium thiocyanides. The reaction mixture contains less than a 1:1 molar ratio of solvent and the process is carried out at a pressure and temperature sufficient to convert at least a portion of the **dinitrile** (e.g., 1,6-**hexanedinitrile**) into a diamine (e.g., 1,6-diaminohexane) and, optionally, an aminonitrile (e.g., 6-aminocapronitrile).

IT 10442-39-4, Tetrabutylammonium cyanide

RL: CAT (Catalyst use); USES (Uses)

(catalyst system and process for the hydrogenation of **dinitriles** into diamines and aminonitriles)

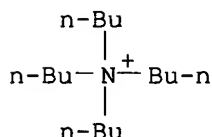
RN 10442-39-4 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, cyanide (9CI) (CA INDEX NAME)

CM 1

CRN 10549-76-5

CMF C16 H36 N



CM 2

CRN 57-12-5

CMF C N

$-\text{C}\equiv\text{N}$

IT 111-69-3, Adiponitrile

RL: RCT (Reactant); RACT (Reactant or reagent)

(catalyst system and process for the hydrogenation of **dinitriles** into diamines and aminonitriles using)

RN 111-69-3 HCAPLUS

CN Hexanedinitrile (9CI) (CA INDEX NAME)

NC-(CH₂)₄-CN

IT 124-09-4P, 1,6-Diaminohexane, preparation 2432-74-8P,

6-Aminocapronitrile

RL: SPN (Synthetic preparation); PREP (Preparation)
(catalyst system and process for the hydrogenation of
dinitriles into diamines and aminonitriles using)

RN 124-09-4 HCAPLUS

CN 1,6-Hexanediamine (7CI, 8CI, 9CI) (CA INDEX NAME)

H₂N-(CH₂)₆-NH₂

RN 2432-74-8 HCAPLUS

CN Hexanenitrile, 6-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

H₂N-(CH₂)₅-CN

IT 7440-02-0, Raney nickel, uses

RL: CAT (Catalyst use); USES (Uses)

(catalysts; catalyst system and process for the hydrogenation of
dinitriles into diamines and aminonitriles using)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:439662 HCAPLUS

DOCUMENT NUMBER: 135:210668

TITLE: Reactivity and surface analysis studies on the
deactivation of Raney Ni during adiponitrile
hydrogenation

AUTHOR(S): Allgeier, Alan M.; Duch, Michael W.

CORPORATE SOURCE: E.I. duPont de Nemours Co., Wilmington, DE, 19880, USA

SOURCE: Chemical Industries (Dekker) (2001), 82(Catalysis of
Organic Reactions), 229-239
CODEN: CHEIDI; ISSN: 0737-8025

PUBLISHER: Marcel Dekker, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The heterogeneous catalyst, Raney Ni, deactivates during the hydrogenation of adiponitrile. The present study shows that the deactivation process is general to α , ω - **dinitriles** of varying length and also occurs for 6-aminocapronitrile but does not occur with mononitriles such as butyronitrile. In contrast to a previously reported mechanism for Ni catalyst deactivation in acetonitrile hydrogenation, these reactivity trends implicate deposition of oligomeric secondary amines and thus blocking of active sites as the mechanism of deactivation. Electron spectroscopy for chemical anal. (ESCA) reveals an increase in C and N on deactivated samples compared to nondeactivated samples and supports the conclusions drawn from reactivity studies.

IT 7440-02-0, Nickel, properties

RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process);
PRP (Properties); PROC (Process); USES (Uses)

(Raney; reactivity and surface anal. studies on deactivation of Raney
Ni during adiponitrile hydrogenation)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT 111-69-3, Adiponitrile 2432-74-8, 6-Aminocapronitrile

RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC
(Process); RACT (Reactant or reagent)

(reactivity and surface anal. studies on deactivation of Raney Ni
during adiponitrile hydrogenation)

RN 111-69-3 HCAPLUS

CN Hexanedinitrile (9CI) (CA INDEX NAME)

NC-(CH₂)₄-CN

RN 2432-74-8 HCAPLUS

CN Hexanenitrile, 6-amino- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

H₂N-(CH₂)₅-CN

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his

(FILE 'HOME' ENTERED AT 18:48:43 ON 06 JAN 2006)

FILE 'HCAPLUS' ENTERED AT 18:48:49 ON 06 JAN 2006
E ALLGEIER ALAN MARTIN/AU

L1 21 S E1-3
L2 4 S L1 AND ?DINITRILE?
SELECT RN L2 1

FILE 'REGISTRY' ENTERED AT 18:49:38 ON 06 JAN 2006
L3 12 S E1-12

FILE 'HCAPLUS' ENTERED AT 18:49:46 ON 06 JAN 2006
L4 4 S L2 AND L3

=> d his ful

(FILE 'HOME' ENTERED AT 18:48:43 ON 06 JAN 2006)

FILE 'HCAPLUS' ENTERED AT 18:48:49 ON 06 JAN 2006

E ALLGEIER ALAN MARTIN/AU

L1 21 SEA ABB=ON ("ALLGEIER ALAN"/AU OR "ALLGEIER ALAN M"/AU OR
"ALLGEIER ALAN MARTIN"/AU)

L2 4 SEA ABB=ON L1 AND ?DINITRILE?
SELECT RN L2 1

FILE 'REGISTRY' ENTERED AT 18:49:38 ON 06 JAN 2006

L3 12 SEA ABB=ON (10424-65-4/BI OR 10442-39-4/BI OR 111-69-3/BI OR
124-09-4/BI OR 13435-20-6/BI OR 2432-74-8/BI OR 630-08-0/BI OR
74-90-8/BI OR 7439-89-6/BI OR 7440-02-0/BI OR 7440-18-8/BI OR
7440-48-4/BI)

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L4 4 SEA ABB=ON L2 AND L3

L5 ANALYZE L4 1-4 CT : 18 TERMS

FILE 'REGISTRY' ENTERED AT 19:13:48 ON 06 JAN 2006

L6 3 SEA ABB=ON (AMMONIUM HYDROXIDE OR AMMONIUM CYANIDE OR
AMMONIUM FLUORIDE OR AMMONIUM THIOCYANIDE)/CN
E AMMONIUM THIOCYANIDES/CN
E RU/CN

L7 1 SEA ABB=ON RU/CN

L8 4 SEA ABB=ON (IRON OR RUTHENIUM OR COBALT OR NICKEL)/CN

FILE 'HCAPLUS' ENTERED AT 19:16:54 ON 06 JAN 2006

L9 149799 SEA ABB=ON (L8 OR ?IRON? OR ?RUTHENIUM? OR ?COBALT? OR
?NICKEL?) (L) ?CATALYST?

L10 314 SEA ABB=ON L9 AND ?DINITRILE?

L11 7 SEA ABB=ON L10 AND (L6 OR ?AMMONIUM?(W) (?HYDROXIDE? OR
?CYANIDE? OR ?FLUORIDE? OR ?THIOCYANID?))

L12 7 SEA ABB=ON L11 AND ?HYDROGEN?

L13 6 SEA ABB=ON L12 AND (PRD<20031112 OR PD<20031112)

FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS, COMPENDEX, RAPRA,
PASCAL' ENTERED AT 19:20:28 ON 06 JAN 2006

L14 0 SEA ABB=ON L13

FILE 'USPATFULL' ENTERED AT 19:23:59 ON 06 JAN 2006

L15 262 SEA ABB=ON L12 AND (PRD<20031112 OR PD<20031112)

L16 260 SEA ABB=ON L15 AND ?PROCESS?

L17 142 SEA ABB=ON L16 AND ?HYDROGENAT?

L18 16 SEA ABB=ON L17 AND ?MODIFIER?

16 cites from USPatfull

FILE 'HCAPLUS' ENTERED AT 19:25:27 ON 06 JAN 2006

L19 6 SEA ABB=ON L13 AND (?PROCESS? OR ?HYDROGENAT? OR ?MODIF?)

FILE HOME

6 cites from CAPLUS

FILE HCAPLUS

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FILE COVERS 1907 - 6 Jan 2006 VOL 144 ISS 3

FILE LAST UPDATED: 5 Jan 2006 (20060105/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 5 JAN 2006 HIGHEST RN 871301-42-7

DICTIONARY FILE UPDATES: 5 JAN 2006 HIGHEST RN 871301-42-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

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*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
*****
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Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE MEDLINE

FILE LAST UPDATED: 6 JAN 2006 (20060106/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 will soon be available. For details on the 2005 reload, enter HELP RLOAD at an arrow prompt (=>). See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 4 January 2006 (20060104/ED)

FILE EMBASE

FILE COVERS 1974 TO 29 Dec 2005 (20051229/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

FILE JAPIO

FILE LAST UPDATED: 02 JAN 2006 <20060102/UP>

FILE COVERS APR 1973 TO SEPTEMBER 29, 2005

<<< GRAPHIC IMAGES AVAILABLE >>>

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html <<<

FILE JICST-EPLUS

FILE COVERS 1985 TO 28 DEC 2005 (20051228/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

FILE COMPENDEX

FILE LAST UPDATED: 2 JAN 2006 <20060102/UP>

FILE COVERS 1970 TO DATE.

<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
THE BASIC INDEX >>>

FILE RAPRA

FILE LAST UPDATED: 16 DEC 2005 <20051216/UP>

FILE COVERS 1972 TO DATE

>>> Simultaneous left and right truncation is available in the
basic index (/BI), and in the controlled term (/CT),
geographical term (/GT), and non-polymer term (/NPT) fields. <<<

>>> The RAPRA Classification Code is available as a PDF file
>>> and may be downloaded free-of-charge from:
>>> http://www.stn-international.de/stndatabases/details/rapra_classcodes.

FILE PASCAL

FILE LAST UPDATED: 19 DEC 2005 <20051219/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
IN THE BASIC INDEX (/BI) FIELD <<<

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 5 Jan 2006 (20060105/PD)
FILE LAST UPDATED: 5 Jan 2006 (20060105/ED)
HIGHEST GRANTED PATENT NUMBER: US6983486
HIGHEST APPLICATION PUBLICATION NUMBER: US2006005290
CA INDEXING IS CURRENT THROUGH 3 Jan 2006 (20060103/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 5 Jan 2006 (20060105/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2005

>>> USPAT2 is now available. USPATFULL contains full text of the <<<
>>> original, i.e., the earliest published granted patents or <<<
>>> applications. USPAT2 contains full text of the latest US <<<
>>> publications, starting in 2001, for the inventions covered in <<<
>>> USPATFULL. A USPATFULL record contains not only the original <<<
>>> published document but also a list of any subsequent <<<
>>> publications. The publication number, patent kind code, and <<<
>>> publication date for all the US publications for an invention <<<
>>> are displayed in the PI (Patent Information) field of USPATFULL <<<
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>>> /PK, etc. <<<

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>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

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